APIs: A Better Strategy for Higher Ed ERP Integration

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Why API’s

2018 EDUCAUSE Top-10 Technologies

1. Use of API’s.

**Top 10 Strategic Technologies**

1. Uses of APIs
2. Active learning classrooms
3. Incorporation of mobile devices in teaching and learning
4. Mobile apps for enterprise applications
5. Technologies for improving analysis of student data
6. Technologies for planning and mapping student educational plans
7. Blended data center (on premises and cloud based)
8. Predictive analytics for student success (institutional level)
9. Database encryption
10. (tie) IT asset management tools (e.g., CMDB)
    (tie) Student success planning systems

**Most Influential Trends**

1. Complexity of security threats
2. Student success focus/imperatives
3. Data-driven decision-making
4. Contributions of IT to institutional operational excellence
5. Increasing complexity of technology, architecture, and data
Why API’s

The growth over time of the ProgrammableWeb API directory to more than 19,000 entries
Why Now?

1. Increased use of SaaS solutions is increasing the burden of integration on campus.
2. Integration is usually driven by nightly feeds extracted from local source ERP system database or data warehouse.
3. As ERP systems move to multi-tenant SaaS, direct database access won’t exist. Worse, each ERP vendor will create their own APIs making it difficult for sharing approaches across ERP vendors.
REX – Functioning As a SaaS Integration Broker

- ImageNow
- Div of Prof Studies
- PS Student
- PS Finance
- PS HR
- Blackboard Learn
- Central Payroll Bureau
- GradesFirst
  - Point and Click (Health)
  - T2 (Parking)
  - RT
  - PT
  - Campus Card
  - Global Viewer (Projectors)

- LRC (Tutor)
- LRC (Supplemental Instruction)
- OUE (Academic Policy Exceptions)
- WorkPlace Answers
- First Year Experience Alerts
- myUMBC Course Catalog
- myUMBC Check My Activity (CMA)
- UMBC Book Store
- Symplicity (Accommodate)
- Symplicity (Residence)
Connections

Incoming
- PS Student (includes Financial Aid and Student Billing)
- PS Finance
- PS HR
- OUE (Academic Policy Exceptions)
- First Year Experience Alerts
- LRC (Tutor)
- LRC (Supplemental Instruction)
- Symplicity (Accommodate)
- Global Viewer (Projectors)
- RT (Request Tracker)
- PT (Project Tracker)
- ImageNow

Bi-directional
- Blackboard Learn
- T2 (Parking Services)
- Symplicity (Residence)
- Campus Card

Outgoing
- GradesFirst
- Point and Click (Health Services)
- UMBC Bookstore
- myUMBC Check My Activity (CMA)
- myUMBC Course Catalog
- Central Payroll Bureau
- Division of Professional Studies
- Workplace Answers
- Visual Arts Student List (AV equipment checkout; card swipe room access)
- Symplicity (Advocate [Judicial])
- UMBCWorks (Career Center)

Legend
- Daily
- Bi-weekly
- Quarter hour
- Semesterly
- On demand
Why Now?

There is no dominate vendor in the multi-tenant SaaS ERP space, especially not SIS. The lessons of LMS “walled garden” versus open standards still applies!
Why IMS?

1. The ERP vendors are all looking to make inroads in K-12 and IMS OneRoster standard is well positioned.
2. IMS through LIS Web Service has worked with ERP vendors in higher ed space and the IMS standards process is a fair process that vendors understand.
3. IMS has tools and infrastructure to manage the evolution over time and certify compliance.
The Imperative for ERP Modernization

ERP-CENTRIC ➔ ERP+ ➔ SERVICE-CENTRIC
SERVICE-CENTRIC ARCHITECTURE

- SaaS Compatible
- “Demotes” the ERP
- More agile
- An edu api is an essential requirement
EDU API: Objectives

Provide consistency for all tools and services inside an institution to pull/push student, teacher, course data

Serve as a façade layer to protect consuming services from underlying product changes and provide a stable integration contract or interchange language

Enable a new generation of smart & sustainable apps, personalized with data about students, and accessed in secure and responsible ways
Survey:
How do you share Student Data on your campus?
How do we get Student Data Today?

- Most schools have some form of batch mode or flat file extracts
- Some schools have developed custom middleware solutions or are leveraging an integration broker capability supplied by their ERP vendor to deliver RESTful web services (examples: OSU, BYU, U Wisc, UMUC)
- Primary need is driven by provisioning use cases
- Broader need to supply data to the campus portal, including mobile apps
- Many expressed desire to have 360 degree view of the student
An API Could Provide A Consistent View
Why an API?

Why an API?
- Language agnostic
- Data translation (vendor specific APIs)
- Fine grained authorization (TIER - internet2)
- Today, we mean REST (OpenAPI) - we could go towards GraphQL

Ultimately - SIS’s could publish directly to this API
EDU API - Current Work

Use Cases

Phases
- Start with OneRoster Data Model
- Fill Gaps as Needed for HE (use LIS if appropriate)
  - Additional Data needed beyond One Roster: Test Scores, Academic History, Academic Interest

GitHub Repo
- Specification (OpenAPI 2.0/3.0)
- Implementation Examples
Join us:
EDU-API Task Force [https://www.imsglobal.org/edu-api](https://www.imsglobal.org/edu-api)
Contact: Cary Brown ([cbrown@imsglobal.org](mailto:cbrown@imsglobal.org)),
IMS Director of Higher Education Programs
APIs can enable a new generation of Smart & Sustainable Apps: Personalized based on Data about the Student, accessed in a Secure and Responsible way.
References

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